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In This Issue

Object Knowledge

The ability to ignore one's own perspective while taking another person's is an important part of successful social functioning and social interactions. **Sommerville, Bernstein, and Meltzoff** (p. 1846) used a new tool to measure the degree of difficulty involved in children's and adults' ability to ignore their own knowledge when taking the perspective of a less knowledgeable person (in particular, someone who hid an object). Their study, of more than 180 primarily White 3- to 5-year-olds and a group of adults, shows that both adults and children have trouble ignoring their own knowledge while taking another's perspective (in particular, the participants were biased by their own knowledge of where an object was when asked to estimate where someone else would search for the object). They also find that these errors are due to difficulties with perspective taking as opposed to memory or attentional failures. The study's use of a new tool provides a precise numerical estimate of perspective-taking abilities; the tool can be used to study developmental changes across age groups and populations.

Moving objects are of great interest to young infants. The appearance of an object—a red versus a green ball, for example—is also very interesting. In their study of about 45 babies, **Kaldy and Blaser** (p. 1855) devised a method to compare—fairly—working memory for these two properties (appearance and movement), revealing that 6-month-olds remember the appearance (color) of an object better than its movement (rotation speed). Identifying such biases in infants' object cognition offers insight into how they process the visual world. The take-home message: When babies are trying to figure out whether an object is the same one they saw moments before, they rely on the more stable, and hence reliable, identifier (here, color over speed).

Social Security

Children's use of mom as a secure base from which to explore and learn about their surroundings and as a place to retreat to when needed is an important part of development. **Posada et al.** (p. 1896) find that this type of behavior is evident in nine countries: They studied almost 550 children between 10 and 72 months in Canada, Colombia, France, Italy, Japan, Peru, Portugal, Taiwan, and United States using observational techniques in homes and on playgrounds. They also find that experts from different countries define children's optimal use of mother as a secure base in similar ways. And they find considerable variability in the ways children use their moms as a secure base, but that the variability is not based on the countries in which the children live. The results highlight the importance of mother-child attachment relationships beyond infancy.

Race and Ethnicity: Culture and Neighborhoods

Children around the world seem to conceive of certain social categories—such as race, ethnicity, or gender—as permanent, biologically determined, homogeneous, and objectively true. **Diesendruck, Goldfein-Elbaz, Rhodes, Gelman, and Neumark** (p. 1906) compared how more than 100 kindergarteners and fifth graders from two countries think about the same social categories. While Israeli children treated ethnic categories ("Jews" and "Arabs") as objectively true, North American children developed such beliefs about racial categories ("White" and "Black"). The findings indicate that certain social categories are treated as objective truths not because of some universal features that characterize them but because of their particular cultural significance. Identifying the cultural factors that grant social categories significance is critical to remedy the potential malignant effects such conceptualizations have on attitudes toward social groups.

Interactions that are explicitly racial with family members, peers, and adults at school are known to shape African American children's views about their racial identity. However, the role of neighborhood dynamics, particularly those that aren't explicitly racial, is less clear. **Rivas-Drake and Witherspoon** (p. 1918) looked at almost 720 African American adolescents (starting when they were 11

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to 14 and continuing into young adulthood) and their parents from socioeconomically diverse backgrounds, asking about perceptions of safety, neighbors' willingness to intervene or respond to problems, shared values among neighbors, and availability of family-oriented services such as after-school programs for youths. The youths' neighborhood experiences—even if they weren't racial in content—as seventh graders were related to their racial attitudes and beliefs later in adolescence and in young adulthood. The study can inform efforts to improve African American teens' lives by focusing on their neighborhoods.

Focus on Adolescence

Mental control capabilities—such as those involved in doing multiplication tables and vocabulary drills—don't become distinct and well differentiated until age 15, according to **Lee, Bull, and Ho** (p. 1933), who took a longitudinal look at the structure and development of executive functioning. They tracked the development of almost 670 children (who were 6 to 12 when the study began and from low- to middle-socioeconomic-status families in Singapore), testing them annually on computerized and pen-and-paper tasks measuring their abilities to store and work with information simultaneously, inhibit irrelevant information, and switch between task requirements flexibly. In finding that abilities to control thought processes don't near maturity until mid-adolescence, the study provides insights into the course of development.

One of the main challenges of adolescence is learning to self-regulate and make one's own decisions, a task that's complicated by motivational and emotional changes in puberty. **Cohen-Gilbert and Thomas** (p. 1954) asked 100 primarily White people between 11 and 25 years to perform an inhibitory control task that included viewing positive, negative, neutral, and scrambled images. They find that all young teens and slightly older female teens made more impulsive errors when they were emotionally distracted by the negative images; preteens and young adults weren't distracted in this way. The findings shed light on our understanding of the cognitive mechanisms at play when adolescents must regulate their behavior in day-to-day situations.

Global self-esteem (GSE)—the positive or negative ways people feel about themselves as a whole—is central to success in coping with the developmental challenges of adolescence. In their longitudinal study of more than 1,000 students starting in seventh grade, **Morin, Maïano, Marsh, Nagengast, and Janosz** (p. 1967) investigate heterogeneity in the developmental trajectories of GSE over the course of adolescence. They find that instructional components (grade-point average and perceptions of the school's instructional climate) and organizational components (perceptions of the school's justice climate) of adolescents' school life predicted trajectories of GSE mostly among boys, whereas the relational component (loneliness and perceptions of the school's bonding climate) predicted trajectories of GSE mostly among girls. The results suggest that students' perceptions of their schools' justice and bonding climate play a role in determining the effects of school life on GSE.

As children enter adolescence, they often spend a lot of time away from parents—frequently with peers. Parents learn about their teens' lives from their teens, but over the course of adolescence, the amount of information that's shared tends to decline. **Qin and Pomerantz** (p. 1887) took a longitudinal look at 825 teens from working- and middle-class families in the United States and China starting when they were in seventh grade and continuing for two years; the American youths were primarily European American, the Chinese youths were primarily of the Han ethnicity. They find that teens of both cultures who feel responsible to their parents—that is, those who believe they should provide psychological or material assistance to their parents (e.g., by meeting their parents' expectations for them and spending time with their parents)—tend to disclose more information to them over time. In both cultures, the effects went the other way, too, with teens who told their parents more about their lives feeling more responsible over time, pointing to a process of mutual maintenance. The findings suggest that efforts to support teens in developing a sense of responsibility to parents may protect them from sharing less with their parents as they grow older.

It's Elementary

Despite evidence highlighting the importance of early school experiences for the development of children's academic skills, questions remain about what aspects of elementary school promote cognitive development. **Grammer, Coffman, and Ornstein** (p. 1989) looked at the effect of one classroom feature—the language teachers use when teaching science—on children's learning. They randomly

assigned about 50 first and second graders (drawn from a diverse sample of children attending after-school programs) to science units that varied only in how the teachers used language. Children in both conditions learned a lot of factual information, but those exposed to instruction that included strategy suggestion, how and why questions, and prompts for remembering information had more strategic knowledge and engaged in more sophisticated strategy use in a memory task involving instructional content than students who didn't get this type of instruction. The study sheds light on the ways teachers' instructional style affects children's learning and memory skills.

Knowledge of math is important for success in a variety of careers. Previous research has shown that mathematical learning improves when instructors use hand gestures in individualized tutorials. **Cook, Duffy, and Fenn** (p. 1863) find that hand gestures facilitate learning even when presented on a classroom-wide level. In their study, of a socioeconomically and racially diverse group of more than 180 second, third, and fourth graders, they also find that when children learn with gestures, their performance improves after a one-day interval; when they learn without gestures, performance doesn't improve on the day after learning. The study provides fairly straightforward options to inform educational practice, especially in a time when many classrooms are using technology such a smart boards.

Parenting: Positives and Negatives

Environmental stress can, over time, cause burnout in the body's stress response systems. **Hinnant, El-Sheikh, Keiley, and Buckhalt** (p. 2003) studied about 250 children ages 8–10 representing a range of racial/ethnic and socioeconomic backgrounds who were exposed to marital conflict. They find that such conflict seems to be a significant source of environmental stress for children. Consistent with the ideas of allostasis, children who witnessed more marital conflict at age 8 showed less reactivity in adaptive respiratory sinus arrhythmia, or RSA (which gauges stress) at age 9; however, this was true only for children with lower baseline RSA. They also find that witnessing marital conflict may harm the body's stress response systems, which, in turn, are related to cognitive development.

Parents' warmth positively affects children's personality development and adjustment. That's the conclusion reached by **de Haan, Deković, van den Akker, Stoltz, and Prinzie** (p. 2015), who looked at more than 520 Belgian children and their families in a longitudinal study of the associations among parenting, personality development, and problem behaviors from 9 to 17 years. They also find that all children become less extraverted, conscientious, and imaginative between childhood and adolescence. The results suggest that although children's personality characteristics change over time, it's unlikely that children change in personality type after middle childhood. The study also suggests that helping parents be more empathic and responsive to their young children may enhance the children's long-term development.

Parents' negativity (harsh discipline, criticism, conflict) is a reaction to adolescents' genetically influenced externalizing problems (acting out, delinquency, aggression), according to **Marceau et al.** (p. 2031). They also find that parents' negativity doesn't exert an environmental influence on adolescents' externalizing problems. The study, which used a novel design and statistical model, looked at two data sets: 850 Swedish families (in which parents were twins and had adolescent children) and 400 U.S. families (in which parents had adolescent twins); participants were primarily White and middle to upper-middle class. The results suggest that teens' genes are particularly important to the parenting they receive, and that targeting parents' responsivity to and relationship with their adolescents may be a better way to reduce antisocial behavior than working to decrease parental negativity.

Spatial Origins: Small and Large

Children's knowledge about shapes is a key aspect of school readiness and, given the value of spatial thinking, plays a role in how they develop abilities in science, technology, engineering, and math (STEM) fields. In their study designed to teach preschoolers geometric shapes, **Fisher, Hirsh-Pasek, Newcombe, and Golinkoff** (p. 1872) find that 4- and 5-year-olds taught through guided play show better understanding of shape concepts than children taught through direct instruction or free play. Previous studies have shown that children move from concrete to abstract shape concepts after preschool. In this study, 70 predominantly White, upper-middle-class preschoolers were taught the properties of four geometric shapes using guided play, free play, or didactic instruction. The findings suggest that teaching styles that promote exploration and discovery can have a profound influence on children's learning.

Some adults have difficulty reading maps, while others read them with little effort. What about children? How do they understand maps? **Liben, Myers, Christensen, and Bower** (p. 2047) sought to find out whether there are variations in mapping success among children in the middle elementary school years. Specifically, they looked at how well 40 primarily European American, middle-class 9- and 10-year-olds figured out connections between locations in a large, unfamiliar environment, locations on a simple black-and-white map of that environment, and locations on a computer screen video walk; children also did spatial tests. The study finds significant individual differences. Children with higher spatial test scores did better on the mapping tasks. And although some girls did extremely well and some boys made serious errors, overall, boys did better than girls, a finding that's consistent with other research showing that boys and men tend to do better on spatial tasks. The study points to the value of teaching children general spatial skills at an early age to support their mapping competence.

Inferences and Accents

Because people say things in different ways, we have to figure out when a difference in pronunciation signals a different word—for example, the difference between *nice* and *niece*. We must also determine when a difference in pronunciation of a word signals the same word—for example, when the vowel in *nice* is spoken differently by an American English speaker than by an Australian English speaker. Children can reliably understand changes that signal different words by 18 months, but younger children can't do so. In their study of Australian toddlers, **Mulak, Best, Tyler, Kitamura, and Irwin** (p. 2064) show the complementary development of the ability to recognize words across accent differences: 19-month-olds recognized that the different pronunciation of a word in another accent doesn't signal a change in the word (meaning that they can identify words in a different accent), but 15-month-olds did not. They also find that the number of words a child knows predicts how well the child recognizes words in the nonnative accent, but not in the native accent, suggesting that performance is linked to specific language skills rather than overall cognitive ability. The results help us understand children's normal course of development of word recognition, which may help identify language delays.

In everyday conversation, speakers often don't say directly what they mean. For example, instead of simply saying "No, thank you," someone might answer the question "Would you like some coffee?" by saying "I just had a coffee." To figure out what the speaker actually wanted the hearer to do or understand, the hearer has to make inferences to fill in information not directly expressed. Previous research found that only school-aged children are able to solve this nontrivial information-bridging task. In German studies of more than eighty 3- and 4-year-olds and adults, **Schulze, Grassmann, and Tomasello** (p. 2079) find that 3-year-olds understand what they're meant to do even when the speaker doesn't tell them directly. They successfully infer that a speaker's expressed like or dislike of objects is actually an indirect action request for handing her an object, and they interpret a message about unfulfilled conditions for an activity as communicating "I go for the other option."

Intelligence and Reasoning

To be effective learners, it helps for students to be able to accurately assess what they do and don't know. One way these assessments are made is to interpret how easy or difficult it feels to process the information they're trying to learn. **Miele, Son, and Metcalfe** (p. 1879) find that in early elementary school, children may partly base their interpretations of processing effort on their naive beliefs about the nature of human intelligence. Specifically, the more children believed that intelligence is fixed and unchangeable, the less confident they were about having understood a text when it felt difficult to process compared to when it felt easy to process. The study looked at about 50 third and fifth graders from a racially and socioeconomically diverse elementary school.

Research on adult social cognition tells us that past experiences influence our thoughts, emotions, and expectations. Little is known about the development of past-to-future reasoning. **Lagattuta and Sayfan** (p. 2094) presented 265 children ages 4 to 10 and adults with illustrated vignettes. Each scenario featured a character who experiences two helpful, harmful, or mixed past events caused by a perpetrator. Participants predicted the person's future-oriented thoughts, emotions, and decisions upon later re-encountering the same person or animal from the past. While making these judgments, their eye movements to the pictures of past events were recorded using an eye tracker. Recent past events, especially those that were negative, most affected future forecasts. This last impression bias

increased with age, and it appeared in verbal judgments and eye movements. Also, children and adults who had a stronger bias to look longer at negative versus positive past events made more pessimistic future forecasts. This study can inform research on risk assessment, future forecasting, and decision making.

Reading, Writing, and 'Rithmetic

Preschool has been shown prepare children for kindergarten and increase their chances to do well in life, but many city- or statewide preschool programs struggle to attain good instructional quality. **Weiland and Yoshikawa** (p. 2112) looked at the effects of the Boston Public Schools (BPS) prekindergarten program on children's readiness to start kindergarten, comparing more than 2,000 children who took part in the program with a control group who weren't old enough to participate and had alternate forms of care; the children were of racially, linguistically, and socioeconomically diverse backgrounds. The BPS program substantially improved children's language, literacy, math, executive function, and emotional development skills. While all students benefited, effects were particularly strong for Latino children. The program features research-based curricula and teacher coaching, and mostly masters-level teachers; any child in the city can attend, regardless of family income. The study can inform programming and policy decisions in urban public-school districts.

During the first years of active instruction (K through third grade), children's reading skills develop quickly. Later, as active instruction attenuates, children's growth in reading slows. In their longitudinal study, **Logan et al.** (p. 2131) sought to determine whether this is due to nature or nurture. They looked at about 370 pairs of twins (most of whom were European American) starting when the children were 6, using behavior genetics modeling to determine whether their rates of growth in reading were due to genes or environments. They find genetic influences on reading skills, particularly at later assessment points (when the children were 12). However, the rate at which the children's reading skills grew was primarily influenced by shared environment, with some evidence for additional genetic influences on growth. The results highlight the importance of early environmental experiences influencing the later growth of reading skills throughout schooling as well as the importance of genetic effects on individual differences in reading growth.

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